

PATENT

App. Ser. No.: 09/934,407
Atty. Dkt. No. ROC920010085US1
PS Ref. No.: IBMK10085

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A computer-implemented method for a debugger application to select locations for inserting breakpoints in a program being debugged, comprising:

selecting branch points in the program being debugged at which to insert breakpoints, the selecting comprising:

identifying a statement for the program being debugged;

determining ~~which~~ a basic block that contains the statement, wherein the basic block represents sequence of consecutive program statements in which flow of control enters at the beginning and leaves at the end of the basic block;

determining which other blocks present in the program control execution of the basic block; and

inserting a breakpoint at each branch point contained in the other blocks present in the program that control execution of the basic block.

2. (Original) The method of claim 1, wherein the statement is the location where the program being debugged halted execution.

3. (Original) The method of claim 1, wherein the blocks controlling execution of the basic block are blocks on which the basic block is control dependent.

4. (Previously Presented) The method of claim 1, wherein identifying the statement comprises identifying a statement in the source code of the program that may modify a program variable.

5. (Original) The method of claim 4, wherein identifying a value of the statement that may modify a program variable comprises accessing a table comprising the variable mapped to statements that may modify the variable.

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6. (Original) The method of claim 1, wherein identifying the statement comprises identifying statements associated with loop latches.
7. (Original) The method of claim 6, wherein identifying statements associated with loop latches comprises accessing tables comprising the basic block mapped to the loop latches.
8. (Original) The method of claim 1, wherein identifying the statement comprises identifying a currently executing statement of each of a plurality of subprograms.
9. (Original) The method of claim 8, wherein each of the plurality of subprograms is a portion of the program being debugged and performs a specific task.
10. (Original) The method of claim 8, wherein identifying the currently executing statement comprises accessing a table comprising the plurality of subprograms mapped to its respective currently executing statement.
11. (Previously Presented) The method of claim 8, wherein the other blocks present in the program that control execution of the basic block are blocks on which the basic block is control dependent.
12. (Currently Amended) A computer system comprising at least one processor configured to execute a debugging program, wherein the processor, when executing the debugging program, is configured to perform an operation to select locations for inserting breakpoints in a program being debugged, comprising:
- selecting branch points in the program being debugged at which to insert breakpoints, the selecting comprising:
 - identifying a statement for the program being debugged;
 - determining which a basic block that contains the statement, wherein the basic block represents sequence of consecutive program statements in which flow of control enters at the beginning and leaves at the end of the basic block;
 - determining which other blocks present in the program control execution of the basic block; and

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inserting a breakpoint at each branch point contained in the other blocks present in the program that control execution of the basic block.

13. (Original) The computer system of claim 12, wherein identifying the statement comprises:

identifying a program variable; and
determining which statements may modify the variable.

14. (Original) The computer system of claim 12, wherein identifying the statement comprises:

determining a plurality of sets of loop latches for the basic block; and
identifying the statements associated with loop latches.

15. (Original) The computer system of claim 12, wherein identifying the statement comprises:

identifying a currently executing statement of a plurality of subprograms.

16. (Currently Amended) A signal bearing medium, comprising a program which, when executed by a processor, performs an operation to select locations for inserting breakpoints in a program being debugged, comprising:

selecting branch points in the program being debugged at which to insert breakpoints, the selecting comprising:

identifying a statement for the program being debugged;

determining ~~which a~~ basic block that contains the statement, wherein the basic block represents sequence of consecutive program statements in which flow of control enters at the beginning and leaves at the end of the basic block;

determining which other blocks present in the program control execution of the basic block; and

inserting a breakpoint at each branch point contained in the other blocks present in the program that control execution of the basic block.

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17. (Original) The signal bearing medium of claim 16, wherein the statement is the location where the program being debugged halted execution.
18. (Previously Presented) The signal bearing medium of claim 16, wherein the other blocks present in the program that control execution of the basic block are blocks on which the basic block is control dependent.
19. (Previously Presented) The signal bearing medium of claim 16, wherein identifying the statement comprises identifying a statement in the source code of the program that may modify a program variable.
20. (Original) The signal bearing medium of claim 19, wherein identifying the statement that may modify a program variable comprises accessing a table comprising the variable mapped to statements that may modify the variable.
21. (Original) The signal bearing medium of claim 16, wherein identifying the statement comprises identifying statements associated with loop latches.
22. (Original) The signal bearing medium of claim 21, wherein identifying statements associated with loop latches comprises accessing tables comprising the basic block mapped to the loop latches.
23. (Original) The signal bearing medium of claim 16, wherein identifying the statement comprises identifying a currently executing statement of each of a plurality of subprograms.
24. (Original) The signal bearing medium of claim 23, wherein each of the plurality of subprograms is a portion of the program being debugged and performs a specific task.
25. (Original) The signal bearing medium of claim 23, wherein identifying the currently executing statement comprises accessing a table comprising the plurality of subprograms mapped to its respective currently executing statement.

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26. (Previously Presented) The signal bearing medium of claim 23, wherein the other blocks present in the program that control execution of the basic block are blocks on which the basic block is control dependent.